

MISSOURI

resources

Spring / Summer 2006 • Volume 23 • Number 2



Director's Comment

Spring holds a special meaning for me because it's a time for renewal. I can't remember a spring when the promise of new life and renewal meant more to me than it has this year. For those of us who stood on the grounds of Johnson's Shut-Ins State Park just hours after the devastation caused by the Dec. 14 breach of the Taum Sauk Reservoir, it was hard to believe that it could ever be restored. However, staff members have been working diligently with AmerenUE and MACTEC, the company in charge of the cleanup and restoration. I'm pleased to say that we expect to provide public access with interpretive walking, auto loops and picnic areas in portions of the park by Memorial Day weekend. Only a portion of the park will be accessible. Camping will not be available and swimming will not be allowed for safety reasons. This short-term plan will be in place for this season only. The department's long-term redevelopment planning process will continue through this summer.

At public meetings held in Lester-ville, local businesses and residents have told us that repairing the quality of the Black River continues to be a top priority. Department staff members are working with AmerenUE and MACTEC to address this issue as well. More information about ongoing efforts to repair the park and clean up the Black River can be found in this magazine.

I invite you to take time to visit Johnson's Shut-Ins after it reopens this spring. Of course, Johnson's Shut-Ins State Park is part of an award-winning network of state parks and state historic sites found in nearly every nook and cranny of Missouri, and any would make for an ideal spring destination and a perfect place to experience spring's renewal.

The dedicated, constitutional, one-tenth-of-one-percent parks-and-soils sales tax is evenly divided between state parks and soil and water conservation efforts. Parks' half provides about three-fourths of the division's budget for operation and development of state parks. More information about renewing this tax can also be found in this issue of Missouri Resources.

And one last piece of good news: The U.S. Green Building Council (USGBC) recently awarded a Leadership in Energy and Environmental Design (LEED®) Platinum certification for the Lewis and Clark State Office Building, making it the first state government building in the nation to earn this recognition. The building, designed by BNIM Architects, joins an elite portfolio of 12 facilities that have earned the highest tier of recognition possible for energy and environmental design excellence under version 2.0. It is only the second building in Missouri to achieve the USGBC's highest rating. Check out the fall issue of Missouri Resources for more information on this distinction.

Again, I hope you'll take a little time to join us in celebrating nature's renewal by visiting one of our many state parks and historic sites. Spring is calling.



Doyle Childers
Missouri Department of Natural Resources

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by Sue Holst and Lindsay Tempinon

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Saving Soil is a Family Practice

by Lindsay Tempinon

For more than 100 years, the Hopper family has been fighting soil erosion on their northwest Missouri farm. They are keeping soil on their fields with help from the parks-and-soils sales tax. These funds help establish practices that reduce erosion.

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Unnatural Disaster

by Philip J. Tremblay

On Dec. 14, 2005, the upper reservoir of AmerenUE's Taum Sauk hydroelectric facility in Reynolds County ruptured and released more than a billion gallons of water onto a sleeping family and Johnson's Shut-ins State Park. The family has recovered, but the park and area ecosystem will take years to repair.

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DNR photos by Scott Myers

Above right: Muddy water flows down the East Fork of the Black River, near Lesterville, soon after the Taum Sauk Reservoir breach.

Above: Summer clouds pass over farmland and livestock near Highway 50, in Pettis County.

FRONT COVER: The rocky heart of Proffit Mountain is revealed below the reservoir breach near Johnson's Shut-ins State Park.

BACK COVER: Dogwoods announce the arrival of spring across the Show-Me State.

Cover photos by Scott Myers.

An aerial photograph of a rural landscape. The foreground and middle ground are dominated by large, irregularly shaped fields. Some fields are a vibrant green, while others are a deep brown, suggesting different crops or stages of land use. A winding road or path cuts through the fields. In the lower center, there are two small, irregularly shaped ponds or wetlands. To the right of the ponds, there is a small cluster of buildings, including a white house and a barn. The background shows more fields and a line of trees under a clear sky.

Missouri's Parks-and-Soils Sales Tax

Past, Present and Future

by Sue Holst

The Missouri state park system has a proud tradition of preserving and interpreting the state's most outstanding natural landscapes and cultural features while providing recreational opportunities. Since its beginnings in the 1920s, the state park system has grown to more than 140,000 acres in 83 state parks and historic sites and 61,000 acres in the Roger Pryor Pioneer Backcountry. More than 17 million people annually visit the state park system, which has an overall economic impact in Missouri of \$538 million annually.

Because of decreasing funds in the late 1970s and early 1980s, the Missouri Department of Natural Resources state park system had begun to deteriorate. In 1984, Missourians passed a one-tenth-of-one-percent sales tax to support state parks and soil conservation efforts. Two-thirds of Missouri voters renewed the tax in 1988 and 1996. Unless reauthorized, the current tax will expire in 2008.

The tax provides three-fourths of the funding for the state park system, which does not receive any general revenue. "The sales tax is absolutely essential to maintaining our state parks and to the delivery of quality services to all Missouri citizens and the visiting public," says Ron Coleman, president of the Missouri Parks Association. "Without the tax, drastic changes would be required in the way we manage our state park system."

What Has Been Done So Far

Services and Facilities: The key priorities for the funds have been to provide exemplary service to park visitors while also maintaining and upgrading facilities to best meet the needs of those visitors. The Division of State Parks' emphasis on quality service has resulted in over 80 percent of its full-time and seasonal staff providing service directly to visitors at state parks and historic sites. This means they are maintaining the parks and sites, upgrading the facilities, assisting visitors, ensuring the safety of guests and protecting or interpreting the system's natural and cultural significance. Despite new initiatives and additional responsibilities, the number of employees for the state park system has remained fairly constant for the past 10 years.

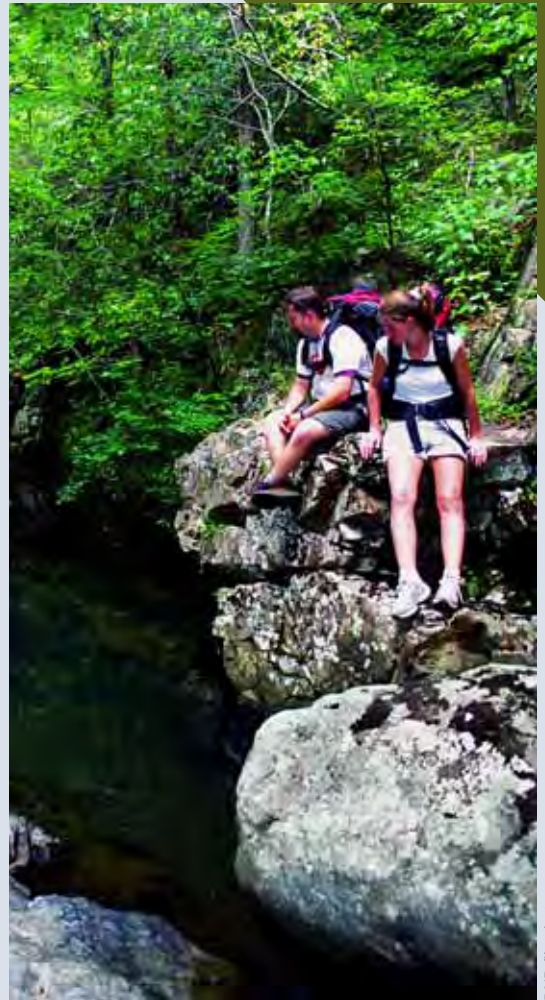
Additionally, the consistent funding from the sales tax has allowed the division to focus on maintaining the current state

park system and enhancing facilities and services where necessary and appropriate. Public input is essential in assisting the division in determining where improvements are needed in the delivery of services and in the maintenance of facilities.

Other Efforts: Another key priority has been to improve the facilities in the system's 40 campgrounds. These improvements include upgrading electrical sites, increasing the number of electrical campsites and renovating showerhouses and restrooms. Approximately 500 campsites have been upgraded with electricity in the last two years. In response to user input, a centralized campground reservation system was implemented, which makes reserving a campsite easier and more convenient.

These campground improvements have been very popular with campers. "When we go camping in state parks, we can see where the money has been used and how it benefits us. These new electric sites and better showerhouses are visible reminders of how important the tax is," says Roger Niermann of Florissant.

Niermann, along with his wife Debby and Charles and Kathleen Hinton of Hazelwood, were recognized by the department in 2005 as the first 25-



DNR file photo

The Missouri State Park system does not receive any general revenue funding from the state. Three-fourths of the system's funding comes from the parks-and-soils tax. Voters have shown their support for the operations and improvements of Missouri's parks and historic sites by overwhelmingly approving the last two renewals.



Eighty percent of Missouri State Parks' staff provide service directly to park and historic site visitors. This includes interpretation (above), maintenance and facility upgrades (above right), visitor information and assistance, and onsite safety through the park ranger program.

year camper award recipients. As long-time campers, the Niermanns and Hintons were using state parks before the tax was created in 1984. "When we first started camping in state parks, we had to clear the grass from the campsites ourselves before we could set up a tent. Now everything is so much better," Niermann relates.

Day-use areas (picnic areas, playgrounds, etc.) have been improved and more than 240 miles of the system's 260 miles of road have been surfaced or resurfaced. More than 980 miles of trail are provided. Water and sewer systems, lagoons and wastewater treatment facilities have been built or upgraded in approximately 30 state parks, ensuring that all environmental standards are met and the park's valuable resources are protected.

The Missouri state park system has become a national leader in the efforts to make the system accessible to everyone. The sales tax funding has allowed the department to upgrade its facilities in compli-



ance with the Americans with Disabilities Act so everyone can truly enjoy the state park system.

New Developments: All recent major acquisitions were the result of partnerships or donations, but the sales tax was used to develop and operate the sites. Two sites were donated to the system: Morris State Park, which preserves a unique landscape in southeast Missouri, and Clark's Hill/Norton State Historic Site, which preserves a hill that William Clark climbed and noted in his journal in 1804. The other site was the Edward "Ted" and Pat Jones-Confluence Point State Park, which includes the confluence of the Missouri and Mississippi rivers. This site was the result of several donations, grants and partnerships. A unique private/public partnership between the department and the L-A-D Foundation is allowing public access to 61,000 acres in the Roger Pryor Pioneer Backcountry. These recent initiatives continue a trend that more than 60 percent of Missouri's state park system has either been donated or acquired at little or no cost through leases.

What Remains to be Done

The main priority for the future will be to maintain and upgrade the current facilities and provide adequate staff to maintain the current level of visitor services. Although much progress has been made, the park system continues to need ongoing stewardship, repairs and maintenance.

Sue Holst is division information officer for the department's Division of State Parks.

Soil and Water Conservation Critical to Missouri

by Lindsay Tempinson

In the 1930s, Americans realized how devastating soil erosion could be. As the Dust Bowl swept across the nation, it relocated an estimated 300 million tons of soil. Legislation began to take shape to better manage and conserve our nation's soil. Despite these actions, in 1982, Missouri was still losing more soil than any other state except Tennessee.

Erosion is a natural process caused by wind and water, but it can increase substantially when the landscape is altered without appropriate conservation practices in place. As long as it rains, there will be erosion.

"We're the caretakers of the land and we need to protect it for future generations," said Elizabeth Brown, chair of the Missouri Soil and Water Districts Commission.

In 1984, Missouri voters passed the one-tenth-of-one-percent parks-and-soils sales tax to help fund soil conservation efforts and state parks. In order to conserve Missouri's soil and water resources for future generations, several voluntary programs have been created to provide agricultural landowners with incentives for installing soil and water conservation practices.

The Soil and Water Districts Commission, through the Missouri Department of Natural Resources, administers the soil funds from the parks-and-soils sales tax, as well as the programs the tax supports, to Missouri's 114 county soil and water conservation districts. Each district works with landowners at the local level to decrease soil erosion and improve water quality. In order to provide these services, each district receives a grant that can be used to hire personnel, fund technical assistance and provide information and education programs.

Since the passage of the tax, Missouri's soil erosion rates have dropped by more than half. According to the last available data, the 1997 Natural Resources Inventory, Missouri's erosion rates have dropped more than any other state.

"Erosion is an ongoing process. I don't know if you'll ever get your land a hundred percent erosion free," said Richard Lierheimer, an Audrain County landowner. During a big rain event, soil can be lost and "you can lose in a matter of a few hours what it takes hundreds of years to get back," Lierheimer added. The hilly topography, soil types and amount of rainfall in Missouri make the state prone to erosion.

"They've [soil and water conservation programs] helped us do some things we wouldn't otherwise be able to do," said Lierheimer. Incentives from the Cost-Share Program have helped Lierheimer install terraces and waterways that reduce erosion on his farm.

The Cost-Share Program provides incentives for agricultural landowners to install practices that prevent or control excess erosion. Landowners can request a reimbursement for up to 75 percent of the cost of a practice. The practice first must go through a certification process and a maintenance agreement must be



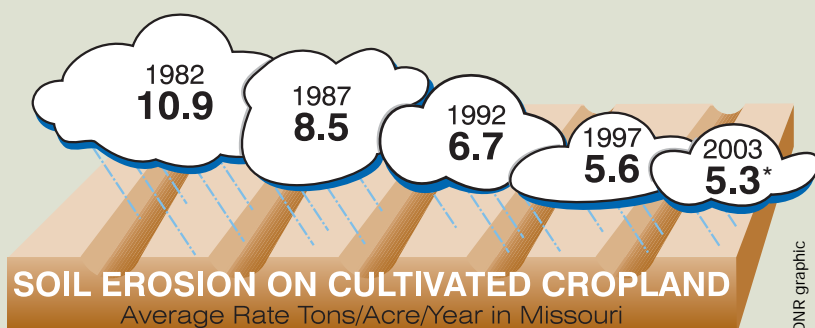
Photo by Sarah Szachniewski,
Warren County



Photo by Ann Whitehead,
Montgomery County

(Above) Missouri's one-tenth-of-one-percent parks-and-soils-sales tax helps local soil and water conservation districts fund and staff educational days across the state. To help illustrate how easily valuable topsoil can be washed away, one ton of soil spread across an entire football field would only be the thickness of a dime.

(Left) Since 1982, Missouri has cut its per-acre rate of soil erosion by more than half – the best improvement in the nation.



*Pre-release estimates based upon the 2003 National Resources Inventory. These estimates are subject to change.

DNR graphic



DNR photo by Lindsay Tempin

More than half of Missouri's land acreage is considered agricultural. With a \$4.97 billion agricultural industry in the state, it is no wonder that a successful soil conservation effort is worth its weight in gold to our economy.

signed. Prior to installation, landowners must contact their local soil and water conservation district and work with the Natural Resources Conservation Service to design the practice.

Programs such as the Cost-Share Program have helped reduce erosion rates in the state by more than half, but it is not the only program helping Missouri landowners conserve soil and water. The Agricultural Nonpoint Source Special Area Land Treatment Program (AgNPS SALT) funds five-to seven-year projects that focus on decreasing agricultural nonpoint source pollution in targeted watersheds. The AgNPS SALT Program uses total resource management practices to decrease sediments, nutrients, pesticides and other chemicals entering waterways. More than 70 watershed projects have received funding and assistance since the program's creation in 1997, and 11 of them have been successfully completed.

The department also offers the Loan Interest-Share Program. The program reimburses a portion of interest on landowners' loans when they purchase equipment or administer management practices that reduce erosion or its potential.

In addition, scientists from the soil science section provide the scientific foundation for conservation by continually updating the Soil Survey, which is available to the public at no charge. The section also provides technical soils assistance to landowners. The survey can be accessed at [<http://soils.missouri.edu>].

Soil and Water Districts Commissioner Richard Fordyce said, "As a farmer, I see

firsthand the improvements we've put in place with the sales tax, but obviously there's more work to be done."

Erosion washes away productive topsoil, leading to decreased productivity of our land. The food that we eat and Missouri's \$4.97 billion agricultural industry depend on productive soil. Of Missouri's 44.6 million acres of land, 26.3 million acres are considered agricultural. Cultivated cropland comprise 10.5 million of those acres; 14.2 million acres are dedicated to pasture and hay land; and 1.6 million acres are Conservation Reserve Program land.

Erosion not only negatively affects the productivity of the land, it affects the quality of the water. When soil erodes, it washes into streams, rivers and lakes. Sediment continues to be the leading cause of water pollution in Missouri. Sediment can lead to the destruction of valuable aquatic habitat, such as fish spawning areas. It also increases the probability of flooding. Suspended soil particles in the water also decrease clarity and sediment carries chemicals and unwanted nutrients directly into Missouri's waterways.

"Keeping chemicals and soil out of the water protects our health and gives us clean water to drink," said Brown. Having to remove unsafe chemicals from our waterways also can add millions of dollars each year to water treatment costs.

Through conservation practices, Bill Ambrose, a Miller County farmer and rancher, has decreased the amount of sediment and chemicals entering the stream that flows past his farm, improving water quality.

"I hope people in the city realize that the water that ends up in their water supply is cleaner and healthier from the very beginning," said Ambrose. He has planted trees and shrubs around riparian areas to act as buffers, built fences to exclude cattle from the stream, and implemented an intensive grazing system.

"The parks-and-soils sales tax allows us to install conservation practices on the land. Landowners would not have had the incentives and been able to install the practices if not for the tax," said Brown. 🌞

Lindsay Tempin is a public information specialist for the department's Soil and Water Conservation Program.

Terracing Tradition

Saving Soil is a Family Practice

by Lindsay Tempinson



DNR photo by Scott Myers

Steve Hopper and his family have been fighting a never-ending battle with soil erosion on their northwest Missouri farm for more than 100 hundred years.

Hopper Farms is located a few miles north of Chillicothe. Hopper, who received a degree in animal husbandry from the University of Missouri-Columbia, operates the farm with his daughter and son-in-law. They raise cattle and row crops, such as corn and soybeans, on the 1,600-acre farm.

Conservation has played a vital role on Hopper Farms since the farm's creation. The family has two theories on farming. "In the Hopper family, we don't give land to anybody who hasn't farmed here. We don't believe in absentee owners because they don't take care of it [the land]," said Hopper. "And when you die, your ground ought to be in better shape than it was when you acquired it."

Hopper admits that sometimes this is difficult. Most farmers will tell you, and Hopper is no exception, that as long as it rains

there will be erosion, and they are right. Rain washes over the land, eroding the soil and depositing it, along with nutrients, pesticides and other chemicals, in our water. Erosion is a natural process caused by water and wind. However, this process can be accelerated when humans alter the landscape through activities such as agriculture and development. By decreasing erosion the productive topsoil necessary to produce our food stays on the land, and does not pollute the water.

The Soil and Water Districts Commission, through the Missouri Department of Natural Resources, administers funds from the parks-and-soils sales tax to Missouri's soil and water conservation districts. In turn, they provide landowners with incentives for installing soil and water conservation practices. These practices help prevent erosion and improve water quality.

"You keep the dirt on the hills so your grandkids can eat as well as you did, and keep soil out of the drinking water of those downstream," Hopper says. Slowing the

Steve Hopper, of Hopper Farms, near Chillicothe, believes his family portrait should include a place for traditional soil conservation practices. This concern crosses several generations of the Hopper Family and helps keep soil on the fields that provide the family's livelihood.



(Above) Plastic pipe is installed as part of the current system of tile outlet terraces that are saving soil on the Hopper farm.

(Below) Contour farming along the terraces further slows water runoff and protects long, gradual slopes from soil erosion.

speed at which rain washes over the land and planting trees, shrubs and grasses help the ground absorb water, decreasing erosion.

Waterways, terraces, buffer strips and no-till planting are a few of the conservation practices used on Hopper Farms. "In one way or another, even through rotation or through mechanical practices, we've been doing conservation on this place for 125 years," Hopper said. Hopper's great-grandfather bought the first parcels of land in 1883 that would become Hopper Farms.

Hopper added, "For almost 60 years the only thing we did on this place was rotate crops and livestock." For three years they would grow crops in a field, then convert it

to pasture for 10 years. This reduced the number of times a field would be plowed. Plowing eliminates ground cover, contributing to erosion. The same principles are applied to the farm today through no-till planting, which increases the amount of crop residue on the ground, decreasing erosion.

In 1938, when Hopper was a child, the Soil Conservation Service, now the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS), designed concrete weirs, and the Civilian Conservation Corps installed them. The weirs, or soil-saving dams, as Hopper refers to them, slow down water coming from a terrace system. They also create a stable path for water to flow through.

"They stopped erosion for a long time," said Hopper. But, like all conservation practices, they do not last forever. He adds that even with upkeep and maintenance, terraces gradually get worked down and waterways eventually deteriorate.

"I've got terraces down there that are 50 or 60 years old," said Hopper. In the 1940s, Hopper and his father, a county extension agent, began terracing the farm. The process was much more difficult than today. Using a level, a grader and a dull ax with a piece of paper folded over the blade to mark the grade, they terraced more than 400 acres in 10 years.

"It took us a while but we made terraces that way," Hopper added.

*"... when you die,
your ground ought to be in better shape
than it was when you acquired it."*

— Steve Hopper



In appearance, a terrace is similar to a staircase. A terrace is a mound of soil that spans the length of a field. By building several terraces in a field, the length of the slope is shortened. A field with a long slope allows water to flow quickly over it, eroding the soil. When the field is broken into several sections with smaller slope lengths it slows the water, decreasing erosion. These structures are built to reduce erosion on cropland.

“By the mid-fifties, the University of Missouri Extension was pushing terraces pretty hard, having field days, demonstrating a new terrace-making machine, the whirlwind terracer,” Hopper said. Still, few landowners built terraces. Hopper says all that began to change in the 1980s due to the development of incentives and programs at state and federal levels, such as the state’s Cost-Share Program, intended to help landowners install conservation practices on their land.

Hopper is still installing terraces on his farm, only now they are built with a dozer and a grader. “Now we’re going the tile outlet route.” A tile outlet terrace was installed in one of his fields in December 2005. According to Hopper, the field was originally terraced more than 50 years ago. About 20 to 25 years ago, grass filter strips were added to the field. Tile outlet terraces divert water to where he wants it, and Hopper feels that they are more beneficial for his farm.

In order to receive state cost-share assistance on a tile outlet terrace, the NRCS must be contacted to design the terrace system and the local district notified in order to start the process. Only then can the building process can begin.

A tile system is built by digging trenches and placing drainage tile and plastic tubing with tiny drainage holes in the trench, and burying it. A riser connects the tile to the surface, and is usually covered with a grate to keep animals out. The terrace is then built, which directs water into the riser. The



DNR photo by Scott Myers

water then flows through the tile to an outlet, instead of over the land. Hopper says that once a terrace is built, maintenance is necessary to keep it working properly.

“We signed a statement saying we’d maintain these practices for 10 years; we try to make them last 20,” Hopper added. “End of 20 years, generally something is wrong – [terrace] tubes plug up or water is cutting somewhere it shouldn’t.”

If a landowner receives state cost-share to build terraces, they must sign an agreement to maintain the practice for 10 years.

Hopper also is working to install buffer strips on about 50 acres, and said that he has planted more than 12,000 trees on the farm. He also has 400 acres enrolled in the USDA’s Conservation Reserve Program, and estimates that he has about 65 to 70 native grass filter strips.

Through the use of these various conservation practices, his dedication and hard work, Hopper has been able to prevent soil erosion and improve water quality.

“By helping ourselves, we benefit our neighbors. I guess that’s a simple way to put it. If we do it right and we treat our ground properly, and all the ground around us, we’ll have clean water and plentiful topsoil for the next year’s crop.” ☀

A “soil-saving dam,” constructed on Hopper Farms in the late 1930s, slowed water coming off the terrace system. The concrete weirs were once the frontline defense against soil erosion. Today, the job is better handled by buried plastic pipe and tile drainage systems.

Lindsay Tempinson is a public information specialist for the department’s Soil and Water Conservation Program.




1. Taum Sauk Reservoir
2. Billion-gallon torrent turns back,
directly toward Johnson's Shut-Ins State Park
3. Black River, East Fork
4. Johnson's Shut-Ins State Park
5. Superintendent's home
6. Park campground and fen
7. Boardwalk trail to Shut-Ins
8. The Shut-Ins

Unnatural Disaster

story by Philip J. Tremblay

photograph by Scott Myers



In less than 15 minutes, more than a billion gallons of water blasted through a ruptured reservoir wall and scoured a path to bedrock through mountainside earth and forest. At the base of the mountain, the surge swept vehicles from a rural road, scattered a family of five along with their disintegrating home and heavily damaged Missouri's popular Johnson's Shut-Ins State Park.

Media quoted paramedic Chris Hoover at the scene: "We'll never see anything like it in our lifetime again."

Sometime before 5:20 a.m. on Dec. 14, 2005, a 600-foot long breach of the 55-acre upper reservoir at the Taum Sauk Hydroelectric Plant released a 5 million-ton torrent. The facility was built atop Proffit Mountain in eastern Reynolds County. Approximately five miles east is Taum Sauk Mountain, in western Iron County, Missouri's highest point.

At 5:12 a.m., according to AmerenUE sources, gauges at the company's main hydropower plant at the Lake of the Ozarks showed the upper reservoir pumped full – to a depth of 90 feet.

At 5:24 a.m., those same gauges showed the water level in the reservoir had dropped 70 feet.

At approximately 5:20 a.m., an estimated 20-foot wall of water reached the bottom of Proffit Mountain and slammed into a truck that was hauling a load of zinc on Route N. The driver climbed onto the truck cab roof and saw that another truck and a car were also submerged, with the drivers also on the roofs. The water receded within 30 minutes.

The reservoir breach released a surge of water that scraped an 8,500-foot-long gash into the tree-covered side of Proffit Mountain. Because the breach was on the northwest side of the reservoir berm, the water rushed down the western slope and into the East Fork of the Black River, less than one-half mile from the home of Park Superintendent Jerry Toops and his family. When the water reached the river, it

Campsite 22 in the campground at Johnson's Shut-Ins State Park, before and after the damaging flood raged through the park.



hypothermia and minor injuries.

As it swept into the park, the water also pushed an empty flatbed tractor-trailer

from Route N near the park entrance and destroyed or damaged a barn, a tractor, a hay-baler and other equipment at a nearby farm. The debris-laden water continued through the park and downstream about two miles to the lower Taum Sauk reservoir, where, fortunately, the dam held. Emergency crews were called in for an evacuation of 100 people from parts of Lesterville, 17 miles south of the lower reservoir. But, because the lower reservoir held, the flood never reached the town.

Union Electric Co., the forerunner of AmerenUE, built its Taum Sauk Hydroelec-

tric Plant on Proffit Mountain in 1963 to provide electricity during times of peak demand. The 55-acre hilltop reservoir, built of a concrete-lined wall of crushed rock, could hold 1.5 billion gallons of water to a maximum depth of 90 feet.

The system generated electricity as water dropped 800 feet down a 7,000-foot tunnel through turbines and then into a 380-acre lower reservoir on the East Fork of the Black River. At night, when electricity demand is low, AmerenUE pumped the water back up the mountain again.

It was during the routine pump-back stage that something went wrong. AmerenUE officials suspect that the automatic pumping system didn't shut off when it filled the upper reservoir. Apparently, the resulting spillover gradually eroded and then suddenly collapsed a V-shaped, 600-foot section of the wall. An event that was over in barely 30 minutes had set into motion a project that would require years, if not decades, to complete.

Greg Combs, a field operations manager for the Department of Natural Resources, said in early February that 60 people were working full time to recover the park, most employed by AmerenUE. The recovery team had removed more than 4,800 dump-truck loads of sediment. Also, 1,750 truckloads of dead trees were removed from the park and taken to a grinder or burned, said Jackson Bostic, emergency response coordinator for the department. More than 1,300 loads of mulch were ground from the debris.

Bostic said, "We worked first to stabilize the river banks and remove debris from the channel. We restored the Johnston Cemetery to its prior condition. Almost all damage assessments were done by mid-January," he said. Once immediate environmental concerns are addressed, more work will be directed toward long-term strategies for recovery.

"Responding to the concerns of local citizens, we are focusing on the Black River all the way down to Clearwater Lake. A lot of people make a living from the river, many have property that has been impacted," Bostic said. Canoe outfitters are concerned that the river may not be clear of sediment when their customers arrive for this season.

Regular public meetings have confirmed that water quality in the Black River is a priority to area residents. The use of non-polluting chemicals to cause suspended particles to sink and reduce turbidity was im-

plemented in the lower reservoir. This effect was fairly successful. It is anticipated that increased flow from spring rains will accelerate the removal of these particles from the Black River streambed.

Much of the current work focuses on streambank stabilization on the East Fork of the Black River, especially where it passes through the park. Part of the department's mission is to protect the aquatic habitat of the state. Monitoring the animal and plant species of the area will continue indefinitely.

Visit [www.dnr.mo.gov] for meeting updates and other progress on the cleanup.

Johnson's Shut-Ins State Park: Popular Destination Suffers Devastation

The billion gallons of water that were released by the reservoir failure flooded Johnson's Shut-Ins State Park, which is located west of Proffit Mountain. The flooding caused extensive damage to the area of the park along the East Fork of the Black River, where most of the park's facilities are located.

Facilities that were destroyed included the campground and the superintendent's residence. Major structures and facilities that were damaged included the boardwalk to the shut-ins, the park's water and wastewater systems, and the park office/store. Mud and debris covered much of the area, including the fen, a wetland natural community that is a designated Missouri natural area. In some areas, including the channel of the East Fork of the Black River, the

landscape was completely altered. The shut-ins, although impacted by sediment and debris, remained essentially intact. A portion of the Taum Sauk Section of the Ozark Trail between Johnson's Shut-Ins State Park and Taum Sauk Mountain State Park was damaged and is closed.

As soon as immediate environmental issues were addressed, assessment of the damage began. This was followed closely by initial cleanup and recovery work, which included removing debris and sediment from the main areas of the park. Soon after, planning began on long-term recovery and redevelopment strategies for the park.

The main portion of Johnson's Shut-Ins State Park remains closed as cleanup efforts continue. "Our goal is to have some services available sometime this summer," said Doyle Childers, director of the Department of Natural Resources. "We will work as quickly as possible but we want to make sure we do it the right way," he said. "Unfortunately, this means there will not be any camping services this season."

The Goggins Mountain hiking and equestrian trail and trailhead, which is located in an area of the park that was not damaged, remains open. All other state parks and historic sites in the area were undamaged and remain open.

For photographs and updates on the park's status, visit [www.mostateparks.com]. 🌅

Philip J. Tremblay is assistant editor of Missouri Resources.

Downstream from the bridge on Route N, soon after the reservoir breach, the East Fork of the Black River flowed thick and muddy. Returning the river water to its former clear quality is the top priority for restoration efforts. Sediment removal with non-polluting chemicals has been fairly successful, but additional improvement is hoped for as seasonal rains wash away remnants of the deluge. In addition to Missouri Department of Natural Resources staff, state and federal agencies taking part in damage assessment and cleanup activities are: the Missouri Department of Transportation, University of Missouri-Rolla geologists and engineers, Missouri Department of Conservation, U.S. Geological Survey geologists and hydrologists, Federal Energy Regulatory Commission and up to 60 AmerenUE employees and contractors.





New Approach Helps Solve Old Problems

The Missouri Department of Natural Resources completed more than 180 initial assistance visits during the first phase of its new compliance assistance initiative, and early results are promising, according to Department Director Doyle Childers.

The department visited 188 land disturbance sites, newly permitted air sources, drinking water facilities, limestone quarries and hazardous waste generators that receive permits, licenses, certifications and registrations from the agency. Walking permit holders through their unique permit requirements and providing compliance assistance, rather than conducting formal inspections, is how initial assistance visits work.

The department focused its initial assistance efforts on permitted facilities that had not received a previous visit or inspection. Because this was not a formal inspection, compliance assistance was provided with the expectation that corrections would be made if any problems were discovered. The department's visits found no concerns at 56 percent of the facilities visited. For the remaining 44 percent, most problems were of a non-critical nature, and the department provided on-site assistance to those facilities about how to correct those concerns.

Initial assistance visits have become standard practice for the Department of Natural Resources. The department is surveying the facilities that participated in the initial phase of the compliance assistance visits to learn more about areas where it can improve its services. In addition, the department is pursuing other improvements to its permitting and enforcement processes.

Detailed information about the department's procedures for initial assistance visits is available in its Field Services Division Operations Manual, which is available online at [<http://www.dnr.mo.gov/services/ops-manual.htm>].



Missouri Holds Ninth Envirothon

Students from 21 Missouri high schools challenged one another on their knowledge of the natural resources and the environment during the ninth annual Missouri Envirothon, held at the Rickman Center in Jefferson City on May 4, 2006.

During the contest, students worked as teams to conduct hands-on experiments and answer written questions focusing on soils, aquatics, forestry and wildlife. They were also required to give an oral presentation about a current conservation issue. This year's topic was Water Stewardship in a Changing Climate.

In Missouri, the event has grown under the sponsorship of the soil and water conservation districts and partnering agencies and organizations. The first Missouri Envirothon was held in 1998, with 10 teams participating. Seven years later, more than 65 teams from seven regions compete in the event.

The strength of the Missouri program enabled the committee to host the Canon Envirothon in Springfield in July 2005. Students from 43 states and seven Canadian provinces came to the campus of Southwest Missouri State.

The 2005 event was sponsored by: Canon U.S.A., Bass Pro Shops, Missouri Soil and Water Conservation Districts, Missouri Department of Conservation, Missouri Department of Natural Resources, Natural Resources Conservation Service, National Wild Turkey Federation, Mrs. Pat Jones, Tyson Foods, West Virginia Canon Envirothon, Missouri Association of Soil and Water Conservation Districts, National Association of Conservation Districts President's Association, Missouri Soil and Water Conservation District Employees Association, Orscheln Industries Foundation, Pioneer, University of Missouri Extension, Missouri Chapter of the Soil and Water Conservation Society, Wal-Mart, Missouri Chapter of the Wildlife Society, Missouri Association of Professional Soil Scientists, McRoberts Farm and Kempe Farms.

"Everything we do affects the way we live," said Peggy Lemons, chair of the Missouri Envirothon. "The Missouri Envirothon is important as it speaks to our leaders of the next generation of conservationists."



Third Satellite Office Opens

Communities and businesses in Missouri's Bootheel will find environmental assistance a few

steps closer as the Missouri Department of Natural Resources opened its new Delta Center Satellite Office. Staff of the new office will be housed at the University of Missouri's Delta Research Center, 147 State Highway T, just south of Portageville.

The Delta Center Satellite Office is the third satellite office opened by the department in three months. New satel-

lite offices were also opened in Maryville and Rolla.

An environmental specialist stationed at the Delta Center office will provide facility inspections and other assistance to facilities in nearby counties, extending and enhancing environmental services provided to the region by the department's Southeast Regional Office at Poplar Bluff.

The department's new Field Services Division oversees the agency's five regional offices, nine satellite offices, the Environmental Services Program, Environmental Assistance Office and other key field activities.

The Delta Center Satellite Office staff in Portageville can be contacted at the



following address:

Mo. Department of Natural Resources
Delta Center Satellite Office
P. O. Box 160
Portageville, MO 63873
(573) 379-5431 phone
(573) 379-5875 fax

Ombudsman Program Fills Final Position


Judy K. Bowman, U.S. Rep. Sam Graves' representative in Clay County, has been named as the department's seventh and final ombudsman. In addition to working for Graves, Bowman owns and operates Movin' Up Seminars and Training, a professional development training company. She also has worked in various positions as a health care administrator and nurse. Bowman will work out of the department's Kansas City Regional Office.

Michael Alesandrini, former director of environmental affairs for the St. Louis Regional Chamber and Growth Association (RCGA) is the department's ombudsman for the St. Louis area.


The purpose of the ombudsman program is to improve communication between the department and the community. Ombudsmen work within the department's regional offices, but operate independently of the office. They inform the regional director and the department director of issues, concerns and problems and assist in issue development for the area.

Jim Froelker, Gerald, serves as ombudsman for the department's Rolla satellite office. Dave Woolery, Branson, and Carrie Smith, Marshfield, will both serve part-time and share the ombudsman duties in the Southwest Regional Office in Springfield.

Froelker, worked for McDonnell Douglas/Boeing for 35 years and served in the Missouri House of Representatives from 1989 to 2003. Woolery, owns an auction company in Branson, worked for 30 years for Southwestern Bell and has held several paid and appointed positions in Taney County, currently serving as chairman of the Taney County Airport Board. Smith served four years as the director



environmental n o t e s



Small Batteries Fuel Hard-Charging Lifestyle


We have become a nation unplugged. We rely more and more on tools and entertainment that are portable and not hooked to a nearby electrical outlet. The power for this trend comes in small packages, some toxic.

The batteries commonly found in cordless power tools, cellular and cordless phones, laptop computers, camcorders, digital cameras, and remote control toys can and should be recycled. Depending on the type, they contain alkaline, carbon zinc, lithium, cadmium or mercuric-oxide. If carelessly disposed of, they can corrode and leak chemicals into groundwater or surface waters.

The nonprofit Rechargeable Battery Recycling Corporation (RBRC) recently announced the collection of almost 5 million pounds of rechargeable batteries in the U.S. and Canada in 2005, an increase of nearly 10 percent from 2004. Since 1994, RBRC has recycled more than 20 million pounds of rechargeable batteries. RBRC recycles these battery chemistries: Nickel Cadmium (Ni-Cd), Nickel Metal Hydride (Ni-MH), Lithium Ion (Li-ion) and Small Sealed Lead (Pb) – weighing less than 2 lbs. or 1 kg.

Since the beginning of 2005, RBRC has experienced an increase in participation among national retailers, businesses, communities and licensee recycling programs to set up convenient drop-off facilities for used rechargeable batteries and cell phones. In 2005, community participation increased 18 percent while public agency participation increased 38 percent. In many cases, when you go to buy new batteries, you can drop-off your used, rechargeable ones at the same place. Businesses need no longer pay for the shipping of rechargeable batteries and cell phones collected at the workplace. Once registered, participants receive a free shipment of collection boxes that includes pre-paid shipping, pre-addressed shipping labels, safety instructions and plastic bags for each used rechargeable battery and cell phone.

In 2005, RBRC conducted a survey that found that respondents use an average of six cordless products every day, as compared to three in 1999. To learn more, call 1-877-2-RECYCLE (273-2925) or go online at [www.call2recycle.org]. To find battery drop-off sites in your community, check out [www.rbrc.org/call2recycle/dropoff/index.php].



of the Secretary of State's southwest region office in Springfield.

They join former legislator Don Summers, Unionville, and Jackson Bostic, Poplar Bluff, who are ombudsmen for the northeast and southeast regions, respectively. Bostic, who began with the department in 1989 as a soil scientist and most recently worked as an environmental emergency response coordinator, replaces Bill Foster. Foster will oversee an in-depth review of the state revolving fund as the department designs and implements

improvements to its drinking water and wastewater loan programs. The goal of the changes is to speed up the revolving fund loan process.

Scott Totten, former director of the Water Protection and Soil Conservation Division, oversees the ombudsman program. In early 2006, Totten, Department Director Doyle Childers and members of the ombudsmen team met with more than 200 citizens in 14 communities to listen to their environmental concerns. Similar trips are planned for the rest of the year.

New Geologic Maps Released

The Missouri Department of Natural Resources' Division of Geology and Land Survey (DGLS) has made 10 new geologic maps for portions of Montgomery, Warren and Lincoln counties available in hard copy.

Geologic maps are used in a variety of applications including industrial and commercial development siting, waste disposal facilities, agriculture, water availability, planning, natural hazard evaluations and economic assessments of natural resources. Bedrock maps identify the rock units at ground surface and surficial material maps characterize the type of sediment, weathered rock or transported material lying on top of the rock units.

These 7.5-minute quadrangle bedrock and surficial material maps continue on-going mapping projects by DGLS. The study area extends from Wentzville to Fulton, east to west, and Montgomery City to nearly Highway 50, north to south. Surficial material maps are available for Hawk Point and Warrenton Northeast quadrangles, and

both bedrock and surficial material maps are available for the Bellflower South, Jonesburg, New Florence, and Pinnacle Lake quadrangles. Mapping within Montgomery, Warren and Lincoln counties continues throughout 2006 and includes surficial mapping in the Wentzville area for the St. Louis Area Earthquake Hazards Mapping Project.

To view low resolution versions of these maps, visit [www.dnr.mo.gov/geology]. For more information, contact Dolly Howard at the DGLS publications desk at 1-800-361-4827 or (573) 368-2125. You are welcome to visit the department's Division of Geology and Land Survey at 111 Fairgrounds Road in Rolla.

Districts Receive Conservation Awards

Missouri Department of Natural Resources Director Doyle Childers has recently honored five Soil and Water Conservation Districts (SWCD) that have



made significant contributions towards the conservation of soil and water during the 2005 fiscal year with his Awards for Outstanding Progress.

Missouri's 114 soil and water conservation districts work with agricultural landowners and the public to conserve the state's soil and water resources. They are funded by the one-tenth-of-one-percent parks-and-soils sales tax. All of the awards were granted for work done between July 1, 2004 and June 30, 2005.

Saline County SWCD assisted agricultural landowners in treating 2,235 acres with active erosion. Sheet erosion occurs when a very thin layer of soil erodes; rill erosion occurs when a concentrated flow of water causes small channels to develop. Terrace systems and diversions were installed, saving an average of 35 tons of soil per acre.

More than 78 thousand tons of soil were saved in 2005.

St. Charles County SWCD held numerous soil and water conservation informational meetings and 10 field days, in which attendance totaled more than

I read your Environmental Notes on Plastic Shopping bags in the Winter 2005 edition. Looking for an easy, environmentally responsible thing to do with used plastic shopping bags? Donate them to your area food pantries. The pantry at a large church near my home places "care packages" in them. Donating bags allows them to be reused at least once before recycling. It helps the needy and protects the environment.

I began donating my used bags in fall 2003, after the church's pantry sent out a request for them. Ask your local food pantries if they will accept them. You can find their phone numbers in the telephone directory, or by calling houses of worship, or even social services offices in your area. Some pantries have outdoor collection bins so you can donate any day or hour – at your convenience.

Patrick Steece
Platte City

The photo you selected for the cover of the Winter 2006 issue of *Missouri Resources* was so insensitive it took my

breath away. The destruction of Busch Stadium represents everything that a state agency dedicated to the protection of natural and historic resources ought to be against.

As your picture vividly illustrates, Busch Stadium was an architectural work of remarkable beauty, probably the best stadium of its era and sensitively related to the Gateway Arch. In appearance it was vastly superior to the stadium that is going to replace it. It was so well maintained that tearing it down is a waste of building materials, not to mention the original investment.


The new stadium also represents two highly objectionable social trends, the use of public funds to enrich private corporations, and the widening gap between rich and poor seen in the features of the new stadium that will be solely for the wealthy.

Surely we have something in Missouri more worthy of celebration than this.

Esley Hamilton
University City

LETTERS



Letters intended for publication should be addressed to "Letters," *Missouri Resources*, P.O. Box 176, Jefferson City, MO 65102-0176 or faxed to (573) 522-6262, attention: "Letters." Please include your name, address and daytime phone number. Space may require us to edit your letter. You also can e-mail *Missouri Resources* staff at moresdnr@dnr.mo.gov 

2,000 people. The district also gave several classroom presentations, wrote articles, and attended numerous events to inform the public of soil and water conservation issues.

Oregon County SWCD implemented practices on 3,732 acres: including intensive grazing systems, permanent vegetative cover establishments and improvements. These practices reduce erosion and improve water quality by increasing the amount of quality forage available on grasslands.

Harrison County SWCD worked with landowners to implement 67 conservation practices. Grade stabilization structures, the primary practice utilized in the county, prevents erosion and improves water quality by creating a shorter slope and slowing water running over the land. On average, each structure saves 435 tons of topsoil each year, to total more than 29,000 tons of topsoil saved annually.

Webster County SWCD was recognized for continued progress of an Agricultural Nonpoint Source Special Area Land Treatment (AgNPS SALT) project. AgNPS SALT projects are locally led projects sponsored by the department that focus on reducing agricultural nonpoint source pollution. The seven-year James River Headwaters Project began in 2002. In 2005, work with landowners implemented erosion control practices and pasture and nutrient management programs, improved woodland health, protected groundwater and stream corridors, and provided information and education programs.

Katy Trail Ride Deadline Nears

Grab your bicycle and catch a ride on the Katy – Katy Trail State Park that is! Applications are now available for bicyclists who would like to participate in Katy Trail Ride 2006, a ride on the nation's longest developed rail-trail project.

"Catch the Katy" is a weeklong bicycle ride on Katy Trail State Park from St. Charles to Clinton. Katy Trail Ride 2006 is sponsored by the Missouri Department of Natural Resources and the Missouri State Parks Foundation.

This 225-mile, scenic bicycle ride will take place June 19-23.

The five-day bike trek will allow cyclists to experience the entire Katy Trail State Park, which takes travelers through many of Missouri's rural communities, alongside open fields and between the Missouri River and its bordering bluffs. Bicyclists will "Catch the Katy" in St. Charles and hop off in Clinton five days later. Daily mileage ranges from 35 to 68 miles.

Participation is limited to 300 people and the deadline for registration is June 2. The registration fee includes breakfast and dinner daily, outdoor camping spaces each night, portable hot showers, gear shuttle, sag support, and a Katy Trail Ride t-shirt and water bottle.

Transportation between St. Charles and Clinton on June 18 or June 23 will be available along with roundtrip transportation from Columbia to St. Charles on June 18 and Clinton to Columbia on June 23 for an additional fee. Day trips are available for bicyclists that would like to participate in this scenic ride but don't have five days to spare.

For more information about the ride or for an application, call the Department of Natural Resources toll free at 1-800-334-6946 (voice) or 1-800-379-2419 (Telecommunications Device for the Deaf) or visit the Web at [www.katytrailstatepark.com].

Grant Benefits Missouri Trails

Gov. Matt Blunt has announced that 20 trail projects in Missouri have received approximately \$1.1 million in funding through the federal Recreational Trails Program.

The Recreational Trails Program is a federally funded grant program for trail-related construction and maintenance. In Missouri, Recreational Trails Program funds are administered by the Missouri Department of Natural Resources in cooperation with the Federal Highway Administration.



The 20 grant recipients, chosen from 56 applications, were selected based on recommendations from the Missouri Trails Advisory Board. The grants were awarded based on the results of a competitive scoring process and the application's suitability under funding provisions included in the Safe, Accountable, Flexible, Efficient, Transportation Equity Act: A Legacy for Users (SAFETEA-LU) and other federal guidelines. At least a 20 percent match is required by the applicant. A funding requirement targets 30 percent of the funding for motorized trails, 30 percent for non-motorized trails and 40 percent for diversified trail use.

For more information about the grant program, contact the Missouri Department of Natural Resources at (800) 334-6946 (voice) or (800) 379-2419 (Telecommunications Device for the Deaf) or call (573) 751-3442.

Governors Call for E85 Vehicles

Gov. Matt Blunt has joined governors from across the country to recognize automakers for producing more flexible fuel vehicles and calling on the auto industry to step up production of even more vehicles that operate on 85 percent ethanol or E85.

"If we are serious about moving away from foreign oil suppliers by increasing ethanol use, the auto industry must continue to stand with us in this effort," Blunt said.

The call to step up production of E85 vehicles follows a meeting of the Governors' Ethanol Coalition. Coalition members have presented auto manufacturers with a resolution reiterating their commendation for the 5 million vehicles operating in the United States that are already capable of using E85.

Blunt is calling on automakers to manufacture more vehicles and models capable of operating on E85 and supporting public policy measures that contribute to added infrastructure for the use of E85. Blunt has toured Missouri to highlight his proposal to



TIME EXPOSURES

Send your photo to "Time Exposures," c/o Missouri Resources, P.O. Box 176, Jefferson City, MO 65102-0176. All pictures will be returned via insured mail. Pre-1970 environmental and natural resource photos from Missouri will be considered. Please try to include the date and location of the picture, a brief description and any related historic details that might be of interest to our readers.



James G. Haman collection

High water has been a multi-seasonal visitor to Cape Girardeau's Mississippi riverfront for many years. A photographer recorded this view looking downriver on Water Street. While it is uncertain the exact year this photo was taken, the presence of electric power poles and a horse-drawn wagon in the right foreground indicate a post-1900 scene.

A 7,210-foot-long concrete wall and earthen levee was started in 1954 and completed in 1964, at a cost of \$4 million, to protect downtown Cape Girardeau. From 1844 to 1999, floodwaters higher than 32 feet threatened the city more than 60 times. The May 1943 flood that prompted the levee construction reached 42.3 feet. In August 1993, the river rose to nearly 48 feet, but this time protection was in place.

The 345-foot-long Mississippi River Mural, facing the riverfront park, and the 500-foot-long Missouri Wall of Fame Mural now decorate the concrete portion of the levee. This photo is from the James G. Haman Collection.

require all gasoline for motor vehicle use sold in the state to contain 10 percent ethanol (E-10). Minnesota, Montana and Hawaii have already enacted an E-10 requirement.

Blunt included full funding for the Ethanol Incentive Fund in his proposed budget to the General Assembly. The budget Blunt signed last year included the full \$5.3 million in funding for the year as well as \$2.7 million of the funds owed from previous years.

Yearning for a Yurt?



Looking for a new kind of camping experience? Try the yurt at Lake of the Ozarks State Park near Kaiser.

A yurt is a circular structure with a fabric cover, much like a tent. Its wooden frame makes it strong and weather-proof and it sits on a wooden platform with decking. It has a locking door, three large windows to enjoy the view, and a dome skylight that can be opened for ventilation.

The yurt in Lake of the Ozarks State Park's campground is located in scenic wooded area with views of the lake. It features a log futon, log futon bunk bed, coffee table, lamp and heater. The unit sleeps five with a maximum occupancy of six. To prepare for your experience, bring everything you would normally bring to go camping such as lanterns, cooking and eating utensils and water containers. The yurt does

not have running water, so plan accordingly. Guests must bring their own linens and sleeping bags. Available to rent year-round at a cost of \$30 plus tax for one to six occupants, the yurt can be reserved by calling 1-877-422-6766 or online at [www.mostateparks.com].

The yurt is part of the continuing effort by the Department of Natural Resources to provide new camping experiences in Missouri state parks. Last year, the department began offering camper cabins in campgrounds in Mark Twain and Stockton state parks.

For news releases on the Web, visit [www.dnr.mo.gov/newsrel]. For a complete listing of the department's upcoming meetings, hearings and events, visit the department's online calendar at [www.dnr.mo.gov/calendar/search.do].

Expanding Horizons of Fun New Playgrounds Set Inclusive Standard

As an infant, Natalie Blakemore's son, Zach, quickly began missing developmental milestones. In the midst of numerous doctors' appointments to determine the type and extent of Zach's disabilities, friends invited Natalie and Zach to the park.

"I realized Zach couldn't do much, but thought he could swing in the baby swing," Natalie said. "It only took one push to realize that even that did not have enough support for Zach. I went home in tears that day promising never to return to a park again." Though Natalie, an O'Fallon resident, and Zach, who now uses a walker, eventually tried other playgrounds, they were always met with the same barriers. "Zach is forced to either sit on the side and watch or have someone carry him from place to place. Imagine how many five-year-olds come up to play when your mom is carrying you."



Todd Blakemore photo

Zachary Blakemore

During a vacation to Sterling, Va., in 2002, a relative suggested that Natalie and Zach visit a barrier-free playground. Natalie and her husband, Todd, quickly became interested in building a similar playground in St. Charles County that would provide Unlimited Play – the name of the organization the Blakemores founded – for all children, including her son Zach, now five.

After raising approximately \$525,000 for the \$750,000 playground, Unlimited Play, along with the Lake Saint Louis Parks and Recreation Department, broke ground on the 22-acre park. It includes a special wheelchair-friendly surface, ramps, Braille, a water-spray park and other features.

"One of the most important things about the playground is that it will create a community within a community, where children at a young age can learn from each other," Natalie said.

The playground received funding from the St. Charles County Developmental Disabilities Resource Board, Lake Saint Louis and a Land and Water Conservation Fund grant from the federal government, which is administered by the Missouri Department of Natural Resources. They also received funding from CenturyTel, Citigroup Inc., VFW, American Legion, Wentzville Holt High School, the Christopher Reeve Paralysis Foundation and several other donors. Natalie also credits the project's success to the participation of the Lake Saint Louis Parks and Recreation Department, Unlimited Play's board and volunteers, and Zach's speech therapist, Karena Eoff-Romstad.

Natalie, who has two younger daughters, Brianna and Cassi, has a degree from Brigham Young University in recreation management

and served as summer games director for the Utah Special Olympics. For more information regarding accessible playgrounds contact Unlimited Play at (636)272-1410. To donate to the project, contact Victoria Schmidt at (314) 973-1131.

In St. Louis, a similar playground is being constructed in Forest Park, thanks to the generosity of several individual donors and lead financial donors Dennis and Judith Jones. The Dennis and Judith Jones Variety Wonderland features a wheelchair-accessible "tree house," a 34-foot musical tower for sight-impaired children, a garden designed to attract monarch butterflies, a low-impact teeter-totter and swings with back supports. St. Louis Variety, a children's charity dedicated to serving children with physical and mental disabilities in the Greater St. Louis area, directed the project.

"We're hoping that all new construction or playground renovation will embrace an 'inclusive' plan so that ALL children, able-bodied and those with disabilities, can experience playtime together," said Jan Albus, executive director of St. Louis Variety. "Naturally, they will learn about acceptance and diversity. Through playtime, they'll improve their physical strength while improving social skills, self-esteem, confidence and even negotiation skills."

For those who are interested in starting similar projects in their own communities, Albus offered some advice. "The playground itself must be accessible, but the location must also be accessible to parents," Albus emphasized. "Count on a three-year process. Research community and park guidelines for an inclusive public playground. Then, make certain that you have a design team as talented as Powers Bowersox Associates and HOK. Their expertise and counsel were invaluable," Albus said.

St. Louis Variety named Dennis its 2004 Man of the Year and Saint Louis University awarded Dennis and Judy each a humanities doctorate degree in 1998. Dennis co-founded OJF Pharmaceuticals in 1969 and in 1981 became founder, chairman and CEO of Jones Pharma. With other

accessible playgrounds already beginning to appear in the St. Louis region, the Jones' hope the construction in Forest Park will inspire others to get involved in efforts in their communities.

"A playground is such a simple concept, yet this state-of-the-art playground will provide therapy, learning and social development opportunities for Variety children," Dennis said. "Now while their siblings are playing, they can join them on the playground instead of sitting and watching or staying at home."



William Greenblatt photo

**Dennis and Judith Jones
Variety Wonderland Playground**

Kathy Deters is a public information coordinator for the Missouri Department of Natural Resources.

Crowder State Park

by Jennifer Sieg

The names of many famous Missourians, from all walks of life, adorn buildings, monuments, lakes, colleges, public lands and parks throughout the state. Missourians have honored their favorite writers, artists, politicians, doctors and war heroes in this way to recognize and pay tribute to their achievements. Nestled in the rolling hills of northern Missouri near Trenton is Crowder State Park, named after one such Missouri citizen.

The park's namesake, Maj. Gen. Enoch Herbert Crowder, was born a few miles from the park in the hamlet of Edinburg in 1859. After attending Grand River College in Edinburg, he continued his education at West Point. His military career included efforts to subdue Geronimo and his Apache band, serving as military governor of the Philippines and as the first ambassador to Cuba. He is best remembered as the "father of the selective service." As judge advocate

general, he authored the Selective Service Act of 1917. This created the system of local draft boards that provided three million young men to boost the Allies to victory in World War I. Crowder was recognized for his knowledge, devotion to duty and dedication to fairness. The inscription on his gravestone in Arlington National Cemetery reads, "A Military Man Who Understood the Civic Spirit of a Free People."

Today, the park named in his honor serves as a place for people to relax, recreate and enjoy their freedoms. It is composed of rugged slopes and stately forests amid a region of mostly level farmland. The park's rich glacial soils nurture thick forests of white oak, northern red oak, hickory and sugar maple trees. Winding its way through the park is the Thompson River, which is named after Dr. William Preston Thompson, whose residence ruins lie within the park. Cottonwood, silver maple and river birch



DNR photo by Scott Myers



George Denniston photo

(Above) Crowder State Park features 41 campsites, including two designed specifically for people with disabilities. Some sites are available on a first-come, first-served basis.

(Below) Thirty-one of the campsites have electrical hookups for those who enjoy a more convenient camping experience.

trees border the river. The rich bottomlands are home to stands of cottonwood, hackberry, bur oak and slippery elm that shade carpets of waterleaf, jewelweed and wood nettle. Delicate ferns and lush carpets of mosses cling to sandstone ledges. Prairie, a landscape that once dominated the region, is being restored in areas of the park. The diverse landscape attracts many bird species, including Neotropical migrants such as the yellow-billed cuckoo, red-eyed vireo, eastern wood pewee and acadian flycatcher during spring migration.

More than 14 miles of hiking, mountain biking and equestrian trails allow visitors

the opportunity to experience these natural features of the park and enjoy solitude. Hike the park's rugged hills or ride your bicycle or horse along the Thompson River. View a prairie restoration area, the Thompson River, woodlands, bottomland forests, and the ruins of the Thompson house and cemetery along park trails. A local trail organization, the Green Hills Trail Association, has assisted the park in the development and maintenance of some of the trails.

For those wanting a more relaxing day in the park, the 18-acre Crowder Lake offers anglers an opportunity to cast their lines for channel catfish, largemouth bass, crappie and bluegill. Lounging on the lake's sand swimming beach is another laid-back option for visitors. A bathhouse is available.

Make a day of it and bring along a picnic lunch to enjoy at one of many secluded picnic sites nestled under lofty trees. Large groups can reserve one of two open picnic shelters, one of which overlooks the lake. The shelters rent for \$30 per day or are available free on a first-come, first-served basis if they are not reserved. Swings, volleyball poles, a paved tennis court and open space for running make the park a great place for family gatherings. For \$40 per day, the family gathering can be held indoors with the rental of the park's enclosed shelter, which is equipped with a sink, stove, refrigerator, restroom, heater and fireplace. Open Shelter No. 1, the park's newest shelter, and the enclosed shelter are accessible to people with disabilities.



DNR photo by Scott Myers



Grundy
County

Watch the sunset on Crowder Lake – a beautiful 18-acre impoundment with catfish, crappie, bass and panfish. It also has a swimming beach and bathhouse. The park also features trails for hiking, cycling and horseback riding.

George Denniston photo



George Denniston photo

Play for more than a day and sleep under the stars in the park's campground, which houses 41 campsites, 31 of which have electric hookups and two of which are accessible to people with disabilities. Camping amenities include a playground, hot showers, water, laundry facilities, firewood and a dump station. Reserve your camping spot in advance by calling 1-877-ICampMo or online at [www.mostateparks.com]. First-come, first-served campsites also are available.

Non-profit youth groups can reserve the park's special-use area for their next overnight outing. The area features open space for tents, picnic tables, fire rings, a water hydrant and a vault toilet. Organized youth groups can also rent the park's organized group camp. Camp Grand River accommodates up to 120 campers

with six sleeping cabins, a dining lodge and a recreation hall. The camp has plenty of features to help create lasting memories for its temporary residents, including lots of open space, an amphitheater, a basketball court and a swimming beach. A summer camp wouldn't be complete without a great place for a campfire to relax, tell stories and sing around. To reserve either of these camping areas, contact the park directly at (660) 359-6473.

Crowder State Park, like all of Missouri's state parks, offers visitors a place to recreate in the outdoors and learn about and explore Missouri's vast array of landscapes. Visit the park to get away from everyday hassles and relax and enjoy the freedoms that people like Maj. Gen. Enoch Crowder have helped preserve.

For more information about Crowder State Park, contact the park at (660) 359-6473, the Missouri Department of Natural Resources toll free at 1-800-334-6946 (voice) or 1-800-379-2419 (Telecommunications Device for the Deaf) or visit the Web at [www.mostateparks.com].

Jennifer Sieg is a public information specialist with the Department of Natural Resources' Division of State Parks.



Career Connection Water Protection – A Job for the Ages

by Colleen Meredith
DNR file photographs

In 1610, Gov. Gage of Virginia, in a Proclamation for Jamestown, Virginia, said, “There shall be no man or woman dare to wash any unclean linen, wash clothes ... nor rinse or make clean any kettle, pot, or pan or any suchlike vessel within twenty feet of the old well or new pump. Nor shall anyone aforesaid, within less than a quarter mile of the fort, dare to do the necessities of nature, since by these unmanly, slothful, and loathsome immodesties, the whole fort may be choked and poisoned.”

This proclamation shows that safeguarding community water supplies has been a priority of American communities for centuries. Frank McDaniels, an environmental specialist with the department’s Public Drinking Water Branch, believes that protecting our drinking water sources is as important now as it was back then.

“I’ve been a hunter since I was two. Hunting ethics have taught me not to litter or contaminate the soil and water. If we don’t protect the environment today, there won’t be anything to protect tomorrow,” said McDaniels.

McDaniels’ job is to provide training to drinking water operators about source water protection and motivate communities to develop a protection plan. Source water is untreated water from streams, rivers, lakes, or underground aquifers that is used to supply private wells and public drinking water. Developing a source-water protection plan is not mandatory, but is a way to determine which contaminants are threats to local drinking water



sources and how to protect drinking water from them. The department regulates 1,261 community water supplies and 1,129 non-community supplies. Schools, restaurants, motels, campgrounds and churches with their own wells are typical non-community water systems.

As of November 2006, there were 42 approved source-water protection plans for supplies serving 300,000 people in Missouri. McDaniels is trying to increase the number of communities with plans. He shows communities that protecting the water source from contaminants keeps the raw water cleaner. Cleaner raw water requires less treatment. This reduces costs and increases water safety for the district and customers.

“Protecting a water source is our first line of defense. If contaminants don’t get into the water source, you don’t have to get them out,” said McDaniels. “I bring energy and enthusiasm to my job because I believe how

Frank McDaniels (left) meets with community representatives. Planning by members of a community protects local water resources by defending them against a variety of potential contaminants. A plan that identifies these threats to source water quality helps ensure clean water in private and public wells.

“... If we don't protect the environment today, there won't be anything to protect tomorrow.”

– Frank McDaniels, DNR Environmental Specialist

(Right) Drinking Water Protection Area signs are provided to communities that have received department approval for a local source water protection plan. A source of pride among communities, the signs are especially helpful to emergency personnel responding to hazardous spills. Posted on roads where the given protection area begins, the signs alert cleanup personnel that a local drinking water supply might be affected by a spill in the area. They also are often displayed in a decal format on community business windows. This informs the public that the business is doing its part to help keep the area's water clean. The signs also remind others to help do their part to assist and support that successful effort.

important it is for all of us to have clean water,” he added. McDaniels often works with the Missouri Rural Water Association, a source of professional services, support and representation for Missouri water and wastewater utilities. He also serves on a task force that developed guidance for source-water protection plans. On a broader scale, McDaniels represents the Public Drinking Water Program on other department groups involved in watershed planning.

Don Scott, a coworker, feels McDaniels' strength is in his ability to motivate and educate. “I've seen Frank during training sessions. He really reaches the operators. They pay attention to him because he [McDaniels] was an operator,” Scott said.

McDaniels was a water system operator for the City of New Franklin for more than 10 years before attending Crowder College in pursuit of a degree in Environmental Health. He began his department career as a water specialist at Poplar Bluff's Southeast Regional Office in 1994. In 2002, McDaniels



moved to Jefferson City and became the source water protection coordinator with the department's Public Drinking Water Branch. McDaniels said, “I went around the South Pole to get to the North. I

started working in wastewater and drinking water and then quit. When I got away from the work, I realized how important it was.”

To become an environmental specialist for the department you must have a bachelor's degree in Environmental Science or Technology, Chemistry, Biology, Geology, Engineering, Agronomy, Forestry, Soil Science, Ecology, Wildlife Management, Agriculture, Animal Science, Natural Resource Management, Soil Conservation or a closely related field.

For more information on this or other positions, call the department toll free at 1-800-361-4827 and ask for the Human Resources Program.

Colleen Meredith is an environmental specialist with the department's Water Resources Program.



Show-Me MISSOURI STATE PARKS KATY TRAIL challenge

DNR photo by Scott Myers

by Dawn Fredrickson

Many would agree that Missouri's state parks and historic sites provide some of the best opportunities for experiencing the state's most scenic natural landscapes and cultural landmarks. Few, however, would probably associate these same areas with places in which to engage in exercise. Yet, several of the recreational possibilities offered, such as swimming, hiking, walking and bicycling, require some level of physical activity or exercise. And, exercise, in addition to a wholesome diet, helps contribute to a healthier lifestyle. Better still, exercising within Missouri's 83 state parks and historic sites can be done while surrounded by incredibly beautiful vistas or colorful and diverse history.

In addition to preserving Missouri's most outstanding natural landscapes and cultural landmarks, a third component of the mission of the Missouri Department of Natural Resources' Division of State Parks is to provide recreation that is both enjoy-

able and healthy. To highlight this aspect of its mission, promote a healthier lifestyle in its visitors and encourage use of its facilities for physical activity, the division has partnered with the Missouri Department of Health and Senior Services to offer Missourians a fitness program, the Show-Me Missouri State Parks – Katy Trail Challenge.

Launched this past April, the Show-Me Missouri State Parks – Katy Trail Challenge invites participants to walk, bicycle, jog or engage in 225 miles of physical activity in a year. Although participants are welcomed to use the 225-mile Katy Trail State Park to participate in the challenge, they also are encouraged to use other state parks, local parks, community walking trails, other long distance trails or fitness centers.

Participants are sent a brochure that includes an activity log to track miles or activities completed. Participants are also sent information for adopting a healthier diet and informa-

tion about Missouri's state park system. Upon completion of the year-long program, participants receive a T-shirt and will be entered into a drawing for a lodging package in Missouri state parks, which includes a two-night stay and evening meals for two people. Winners of the drawing will be announced in April 2007.

So, during your next visit to a state park or historic site, consider participating in the many physical activities Missouri's state park system has to offer and join the Show-Me Missouri State Parks – Katy Trail Challenge.

For information on participating, please contact the Department of Natural Resources toll free at 1-800-334-6946 (voice) or 1-800-379-2419 (Telecommunications Device for the Deaf). Information can also be requested by e-mail at moparks@dnr.mo.gov.

Dawn Fredrickson is planning section chief for the Department of Natural Resources' Division of State Parks.



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